

# CAS ETH in Machine Learning in Finance and Insurance

## Your Innovation Project

*Version: July 2024*

**About:** Embark on the culminating journey of your CAS in Machine Learning in Finance and Insurance with your Innovation Project. This final task challenges you to transform an inspired idea into a tangible prototype, utilizing robust Machine Learning concepts. Drawing inspiration from the workshops of Block II and Block III, you will develop and implement a pioneering project that showcases your acquired expertise. Your journey concludes with the delivery of a comprehensive project report and a compelling final presentation, demonstrating your innovative contribution to the field.

### Formal Details:

Credits:	3 ECTS
Registration:	Via your Mystudies account enroll in “Innovation Project” for Fall 2024 Term
Duration:	Part-time 6-8 weeks
Deadline:	October 31, 2024, for the Project Report
Deliverables:	Project Report: 10-15 pages Project Presentation of 15-20 min

## Process

### Step 1: Select a Topic

Feel free to pick a topic / application of your own (or from your company) or build on an idea/presentation for a workshop of Block II or Block III. Feel free to contact speakers and lecturers as well to get further input.

Your project should cover:

- A sound report on the Machine Learning method you choose; a small literature review is optional.
- An empirical part: Choose your focus between a data project or a strategic project:  
Data Project: Comment on data preprocessing, ensuring quality and consistency. Review fine-tuning your model, guided by experimentation and validation. Comment on a framework for evaluating performance metrics.  
Strategic Project: Provide a systematic exploration of strategies, policies, ethical considerations, and regulatory compliance related to your project. Review current frameworks and best practices, highlighting key elements such as transparency, accountability, and bias mitigation. Describe the methodology for developing your framework, including stakeholder engagement and risk assessment. (For the empirical part you can review existing frameworks or run selected interviews with professionals)
- Comment on its real-world applicability: Conclude with a comment on the real-world applicability and transformative impact of your project. For the strategic project, conclude with actionable insights and future directions for robust AI governance, ensuring ethical and responsible AI deployment.

## **Step 2: Get Approval**

Hand-in a short outline (max 1 page) summarizing your project idea and send it to Bastian Bergmann ([bbergmann@ethz.ch](mailto:bbergmann@ethz.ch)). Bastian will review it with the Program Directors (Patrick Cheridito, Josef Teichmann).

Deadline: latest by mid-September

## **Step 3: Hand-in the Project Report**

Hand-in your final project report and related files (e.g. Jupiter Notebooks, data) either via the Innovation Project Moodle Page or via Email to Bastian. In case you use confidential data / company data it is also ok to present the aggregated results.

Deadline: End of October

## **Step 4: Project Presentation**

Part of the Innovation Project is a short presentation (15-20 min) to the class and supervisors on a selected date in early / mid-November.

Overall Grading for the Innovation Project: Project Report (70%) + Project Presentation (30 %)

## **Step 5: Get your CAS ETH Diploma**

Celebrate your CAS ETH Diploma with all participants and lecturers at the Graduation Evening to take place end/mid-November (tba)

For any questions do not hesitate to contact Bastian Bergmann ([bbergmann@ethz.ch](mailto:bbergmann@ethz.ch)).